

IN THE CLAIMS

1.-27. (Cancel)

28. (Currently Amended) A method for treating substrate surfaces, comprising the steps of:

placing a substrate in a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby splitting water vapor into a reducing active member $\{\text{H}\cdot\}$ ($\text{H}\cdot$) and an oxidative active member $\{\cdot\text{OH}\}$ ($\cdot\text{OH}$); and

letting said reducing and oxidative active members $\{\text{H}\cdot\}$ ($\text{H}\cdot$) and $\{\cdot\text{OH}\}$ ($\cdot\text{OH}$) contact with a surface of said substrate to be treated.

29. (Currently Amended) A method for treating substrate surfaces, comprising the steps of: horizontally transferring a substrate into a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby decomposing organic substances deposited on a surface of said substrate and at the same time splitting water vapor into a reducing active member $\{\text{H}\cdot\}$ ($\text{H}\cdot$) and an oxidative active member $\{\cdot\text{OH}\}$ ($\cdot\text{OH}$); and

subjecting said reducing and oxidative active members $\{\text{H}\cdot\}$ ($\text{H}\cdot$) and $\{\cdot\text{OH}\}$ ($\cdot\text{OH}$) to reactions with decomposition products of said organic substances.

30. (Currently Amended) A method for treating substrate surfaces, comprising the steps of:

horizontally transferring a substrate into a mixed atmosphere of an inert gas and water vapor under irradiation of ultraviolet light from a dielectric barrier discharge lamp, thereby decomposing organic substances deposited on a surface of said substrate and at the same time splitting water vapor into a reducing active member $\{\text{H}\cdot\}$ ($\text{H}\cdot$) and an oxidative active member $\{\cdot\text{OH}\}$ ($\cdot\text{OH}$);

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dry-washing and minimizing contact angle of a surface of said substrate by subjecting said reducing and oxidative active members [~~H·~~] (H·) and [~~·OH~~] (·OH) to reactions with decomposition products of said organic substances;

wet-washing ~~said~~ said substrate by supplying a wash liquid thereto; and

drying said substrate.